

REMARKS/ARGUMENTS

Claims 109, 292 and 293 have been amended to remove the element that the recess (or recesses) in the first elastomeric layer are “rectangular or semi-circular arched.” This amendment restores the Claims to the scope they had prior to the previous January 26, 2007 Amendment that defined the recess as rectangular or semi-circular arched. No new matter is believed introduced by the amendment, and Claims 109, 292 and 293 remain pending in the Application.

In the Office Action mailed March 28, 2007, the Examiner rejected claims 109, 292 and 293 under 35 U.S.C. 102(a) over U.S. Patent No. 5,856,174 to *Lipshutz*. This rejection is respectfully traversed because, as noted in the previous Response of January 26, 2007, *Lipshutz* shows a structure with a flow channel and deflectable membrane formed in different layers. In contrast, Claims 109, 292 and 293 all describe methods that include microfabricating a flow channel and deflectable membrane in a single, integral layer.

In this Office Action, the Office asserts that Fig. 2B of *Lipshutz* shows: (1) a first elastomeric layer 116 in which a flow channel 110 is formed, and (2) a deflectable membrane 114 formed integral with the first elastomeric layer 116. *See Office Action*, p. 3, paragraphs 2 and 3. In fact, the flow channel 110 is shown formed in first planar layer 106 – not layer 116 – which is consistent with the description in *Lipshutz*’s specification:

The first planar member 106 has an opening 108 disposed therethrough, defining an inlet to the reaction chamber. This first planar member also includes a fluid channel 110 etched in the surface opposite the surface that is mated with the first polymeric part 102. *Lipshutz*, col. 16, ll. 50-54.

This error was also propagated in the inverted Fig. 2B shown on page 3 of the Office Action. The Office Action figure shows layer 116 mated with first polymeric part 102, but what Fig. 2B actually shows (in any orientation) is first planar member 106 mated with first polymeric part 102. *See also Lipshutz*, col. 16, ll. 46-50.

The description of Fig. 2B, and the Figure itself, are unambiguous in describing first planar member 106 (in which the fluid channel 110 is formed) and second planar member

112 (in which the deflectable diaphragm valve 114 is formed) as two separate layers that are mated together:

In particular, the second part 124 mated to the polymeric part [102] may comprise a plurality of mated planar members . . . *Lipshutz*, col. 16, ll. 46-48.

Fig 2B shows second part 124 encompassing three separate planar members (*i.e.*, members 106, 112, and 116) that are mated to form the part. Furthermore, as noted above, a recess for the fluid channel 110 is only formed in one of these members (106) and the deflectable diaphragm valve 114 is only formed in a different member (112). Thus, Fig. 2B and the corresponding description in the specification of *Lipshutz* neither describe nor suggest that fluid channel 110 and deflectable diaphragm valve 114 are formed integral in a single elastomeric layer. For at least this reason, the reference does not describe every element recited in Claims 109, 292 and 293, and the rejection should be withdrawn.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

Respectfully submitted,

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